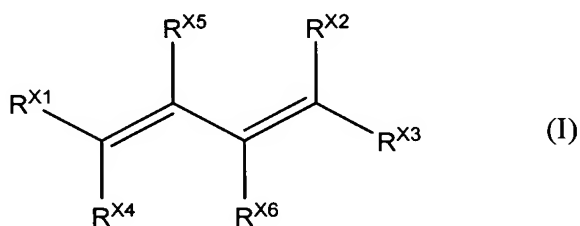


Claim Amendments

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

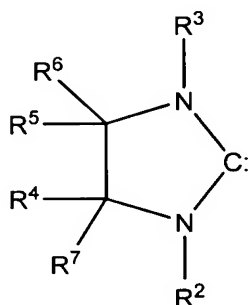
Claim 1. (Currently Amended) A process for the catalytic telomerization of an acyclic olefin having at least two conjugated double bonds (I)



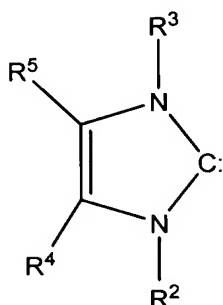
~~with at least one nucleophile, comprising:~~

~~removing alkynes and 1,2-butadiene, if present, from wherein~~ a mixture of 1,3-butadiene with other C₃-, C₄- and/or C₅-hydrocarbons; and then

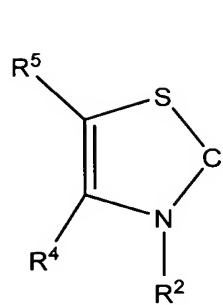
is used telomerizing said treated mixture of 3-butadiene with other C₃-, C₄- and/or C₅-hydrocarbons, as said acyclic olefin having at least two conjugated double bonds, with at least one nucleophile ~~alkynes and optionally 1,2-butadiene being removed prior to the telomerization reaction,~~ and one or more complexes comprising one or more metals of groups 8 to 10 of the Periodic Table of the Elements and at least one carbene ligand having one of the following formulae



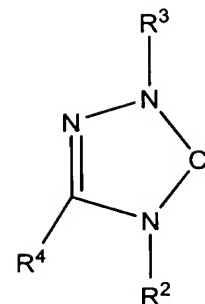
(III)



(IV)



(V)



(VI)

where

$R^{X1}, R^{X2}, R^{X3}, R^{X4}, R^{X5}, R^{X6}$: are each H

R^2, R^3 : are identical or different and are each a) a linear, branched, substituted or unsubstituted cyclic or alicyclic alkyl group having from 1 to 24 carbon atoms,

or b) a substituted or unsubstituted, monocyclic or polycyclic aryl group having from 6 to 24 carbon atoms

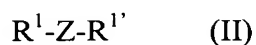
or c) a monocyclic or polycyclic, substituted or unsubstituted heterocycle having from 4 to 24 carbon atoms and at least one heteroatom selected from the group consisting of N, O, and S,

R^4, R^5, R^6, R^7 are identical or different and are each

hydrogen, alkyl, aryl, heteroaryl, -CN, -COOH, -COO-alkyl, -COO-aryl, -OCO-alkyl, -OCO-aryl, -OCOO-alkyl, -OCOO-aryl, -CHO, -CO-alkyl, -CO-aryl, -O-alkyl, -O-aryl, -NH₂, -NH(alkyl), -N(alkyl)₂, -NH(aryl), -N(alkyl)₂, -F, -Cl, -Br, -I, -OH, -CF₃, -NO₂, -ferrocenyl, -SO₃H, -PO₃H₂, where the alkyl groups have 1-24 carbon atoms and the aryl groups have from 5 to 24 carbon atoms and the radicals R^4 and R^5 ~~may also be~~ optionally are part of a bridging aliphatic or aromatic ring, wherein, when the catalytically active metal of groups 8 to 10 of the Periodic Table is Pd, substituents R^2 and/or R^3 are as defined in subgroup (c) above ~~are used as catalyst~~.

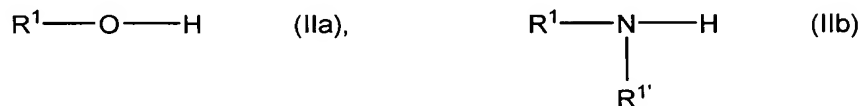
Claim 2. (Previously Presented) The process as claimed in claim 1, wherein R^2 , R^3 , R^4 , R^5 , R^6 and R^7 are identical or different and have at least one substituent selected from the group consisting of -H, -CN, -COOH, -COO-alkyl, -COO-aryl, -OCO-alkyl, -OCO-aryl, -OCOO-alkyl, -OCOO-aryl, -CHO, -CO-alkyl, -CO-aryl, -aryl, -alkyl, -alkenyl, -allyl, -O-alkyl, -O-aryl, NH_2 , -NH(alkyl), -NH(aryl), -N(alkyl)₂, -F, -Cl, -Br, -I, -OH, CF_3 , -NO₂, -ferrocenyl, SO_3H , and -PO₃H₂, wherein the alkyl groups have from 1 to 24, the alkenyl groups have from 2 to 24 carbon atoms, the allyl groups have from 3 to 24 carbon atoms and the aryl groups have from 5 to 24 carbon atoms.

Claim 3. (Previously Presented) The process as claimed in claim 1, wherein said nucleophile has formula (II)



where Z is O, N($R^{1''}$), S(O₂), Si($R^{1''}$)(OH), C=O, C(H₂), C(H)(NO₂) or N(CH₂CH=CH₂) and R^1 , $R^{1'}$ or $R^{1''}$ are identical or different and are each H, a substituted or unsubstituted, linear, branched or cyclic alkyl or alkenyl group having from 1 to 22 carbon atoms, a carboxyl group or an aryl group, where the radicals R^1 , $R^{1'}$ may be joined to one another via covalent bonds and R^1 and $R^{1'}$ may bear identical or different substituents.

Claim 4. (Currently Amended) The process as claimed in claim 1, wherein said nucleophile is a compound of formula (IIa) or (IIb)



where R^1 , $R^{1'}$ are identical or different and are each H, a substituted or unsubstituted, linear, branched or cyclic alkyl or alkenyl group having from 1 to 22 carbon atoms, a

carboxyl group or an aryl group and the radicals R^1 , $R^{1'}$ may be joined to one another via covalent bonds[[,]] ~~are used as nucleophile.~~

Claim 5. (Previously Presented) The process as claimed in claim 1, wherein said nucleophile is selected from the group consisting of water, one or more alcohols, one or more phenols, one or more polyols, one or more carboxylic acids, ammonia, one or more primary or secondary amines and combinations thereof.

Claim 6. (Currently Amended) The process as claimed in claim 1, carried out in a solvent, which is said nucleophile and/or an inert organic solvent.

Claim 7. (Previously Presented) The process as claimed in claim 1, wherein of said carbene ligand and metal are combined in a molar ratio of carbene to metal ranging from 0.01:1 to 250:1.